Lamp Factory Notebook, N-86-08-24

This notebook covers the period August-December 1886. The entries are by Edison and John F. Ott. The book contains notes and drawings relating to the design of the municipal lamp, apparatus for carbonizing and bulb blowing, and the phonoplex. The spine is labeled "32." The book contains 20 numbered pages followed by 17 unnumbered pages. There is also one unnumbered page at the beginning of the book.

Aug. 24 86

TCH

Made clamp of Copper to hold fillements, open on one side, then soldered them by means of the arc, using Copper, Iron, Nickle, Zinc, Tin, Lead, Magnesia, Tin solder, as one told

Also used various salts, Boratic Acid, Naptline, Kerosene, Carbon Bisulphide, Oxide Copper, mixed with lamp black,

Oxide Nickle mixed with lamp black,

Aug 27 86

Soldered Carbon filliments
in clamps with Iron
Pyrites

T[illegible]

Phonoplug 2

Sept 8 86

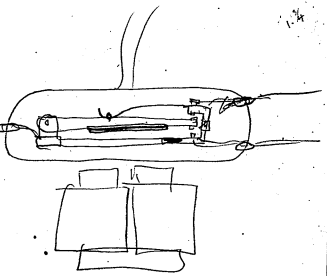
J. F. Ott

Tag

5/64

7/16

1-3/4



1

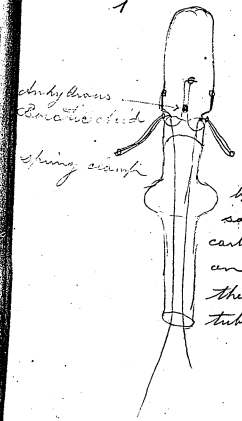
2

Entrance

Sept 10 86

J. T. C. H.

TAE



The wires to be plated on same time the carbon is plated on and cover them with rubber tubing

2

3

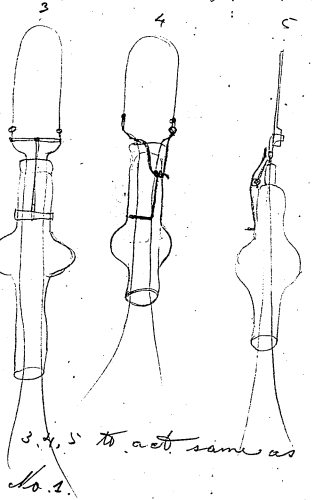
Sept 10 86

J. F. Ott

Tag

To be bound with high resistance compound that will fuse under 1000 volts and allow spring to close circuit

Sept 12 86 J. E. Ott Tal. 4



3. 4. 5 to act same as No. 1.

J. C. H.
Tar

Sept 12 86

These were measured in a platinum
cell ¼ diam ⅛ in depth

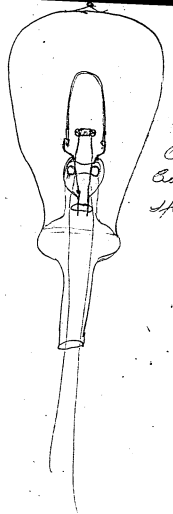
Tested different materials
oxides and salts

	Ohms
Black oxide Copper over	100000
Bismuth Trioxide "	100.000
Antimon Oxide over	200,000
Cadmium Oxide over	200,000
Tin Oxide over	200,000
Manganese Binoxide over	400.000
Measured contents Coal before Carbonizing	2,000,000
after heating	2,04
Charcoal before heating	100,000
After heating with blow pipe	35

J. F. Ott Sep 14 : 86
Tag

Tested different substances for conductivity, to be used in Municipal Lamp.
Carbonized Charchol treated with hydrocarbon deposit
Ohms
Piece 1/8 thick 1/4 square 1.1/4

Carbonized two moulds Anthracite coal,
Heated one mould to red heat then taken it out, this coal measured 21,000, Ohms
The other the same heat and left in twenty minuts then taken out
This measured 500 Ohms

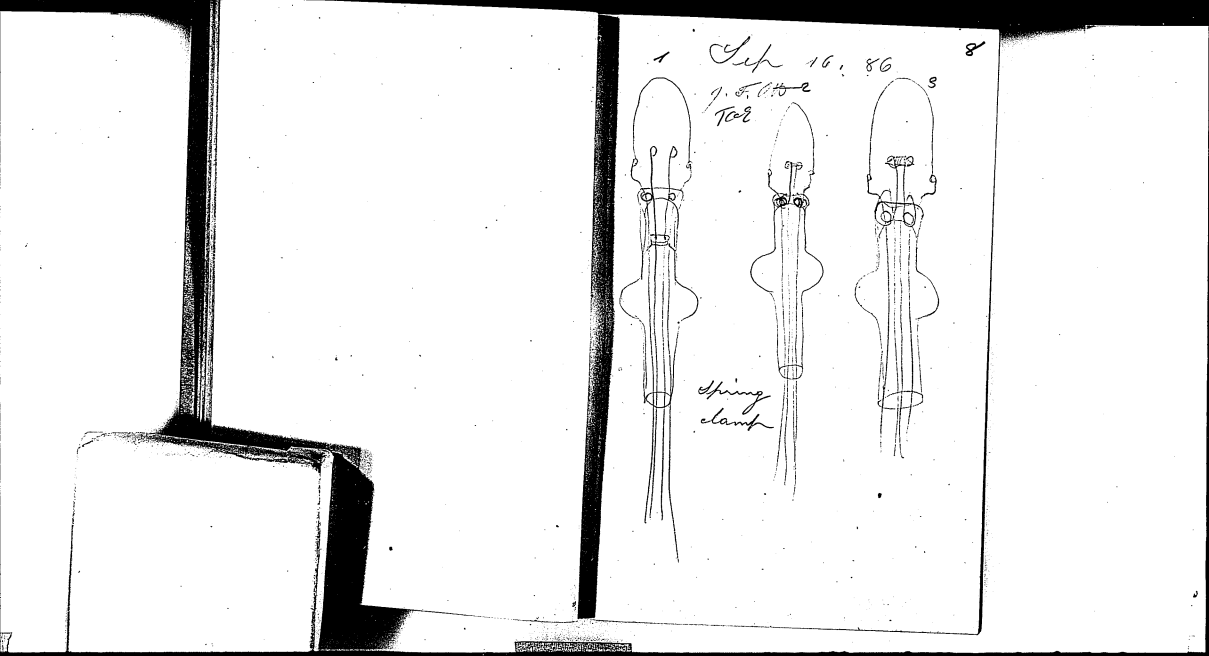


4

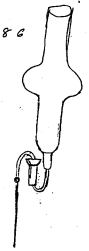
Exp 16.86

J. F. Ott
T&E

Coal
Carbon
Spring clamp


1
Sept 16. 86
8
3
Spring
clamp

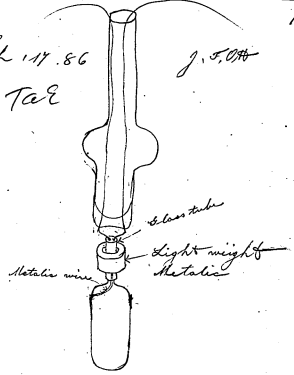
Dep 16 80
J. F. Ots
TcE



Sept. 14. 86

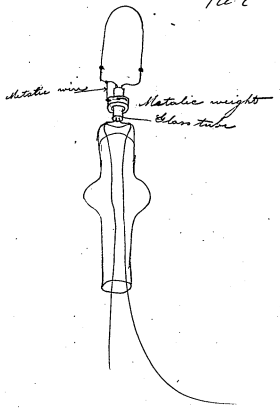
T.E.

J. 5,074



Sept 17.86 J. F. Otto

Tab E



Sept. 18. 86

J. F. Ott
T & E

Made small cups on end of double bark tube ran two wires through them filled them with the following compounds and measured resistance

Copper Oxide 1 Gram Lamp black scarb ½ — " —	Ohms 30
Copper Oxide 1 Gram Lamp black scarb ¼ "	Ohms 46
Copper Oxide 2 Grams Lamp black scarb ¼ "	Ohms 3,900
Copper Oxide 3 Grams Lamp black ¼ "	Ohms 300,000

J. F. Otto Sept 18 86

TAE

Copper Oxide 2 Gram Resistance

Petroleum Coke Carbon 1½ G. Ohms 6,900

Copper Oxide 2 Gram Ohms

Petroleum Coke Carb 1 G 21.000

Packed as is loose according to Measure

Sept 20 86

Mixed Copper Oxide with water packed in small cup on end of double barol tube, and measured resistance Ohms

dry 380,000

Worked well Wet 10.000

9 J.S.D. Tat Sept 20 86

Copper Oxide 1 Gram
P. C. Carbon 1/4 "
Hooked wall

	Ohms
Wet	4,400
Dry	211,000

10 Copper Oxide 1 Gram
P. C. Carbon 1/2 "
No Guard

	Ohms
Wet	200
Dry	1,710

Copper Oxide 1 part
P. C. Carbon 5/8 "
No Guard

	Ohms
Wet	5,700
Dry	7,600

14 Copper Oxide 1 Gram
Bismuth Subcarbonate 1/4
This worked fair

13 J.S.D. TOE Feb 20. 86 15

Copper Oxide 1 Gram

Nicol Carbonate 1/4

This worked fair

14 Copper Oxide 1 Gram

Lead Carbonate 1 Ohms

13 Chromate Lead 1 Gram

P.C. Carbon 1/4 " Ohms

Lift circuit open 8 seconds 250,000

then fused.

14 Red Lead 1 Gram

P.C. Carbon 1/4 "

Lift circuit open 8 seconds 250,000

then fused

12 Red Lead 1 Gram

P.C. Carbon 1/2 Ohms

Made lamps dif, and 900

ruptured a greatobeat then fused.

12 Chromate of Lead 1 Gram 16
S. B. Carb ½ " Ohms
J.F.D. & R No good .15

10 Copper oxide 1 Gram
Chromate Lead 1 " Is low resist
S. B. Carb ½ " " a short circuit
1,10

9 Copper oxide 1 Gram
Red Lead 1 "
S. B. Carb ½ " Ohms
250,000

do 8 same as 9 only dry Ohms
Worked but made 250,000
damps dif and spattered
as usual deal

Made double barrel tube with
cup on end, filled with Copper
oxide and carbon fused top
shut with Anhydrous Boric
Acid

1

Jan 5 1901 .14

Mixed Copper Oxide 3 Grams
L. B. Carbon 1
1/4 "
put in cup Resist

This dried on 100 Volts 2 hours 2 Ohms 250,000
not enough to ship, put in tube
Made same solution wet

Dryed in Bunsen burner Measured 350

This same Dryed in Drying oven
before sealing
dried on 108 Volts 2 hours Ohms 7300
dried through tube

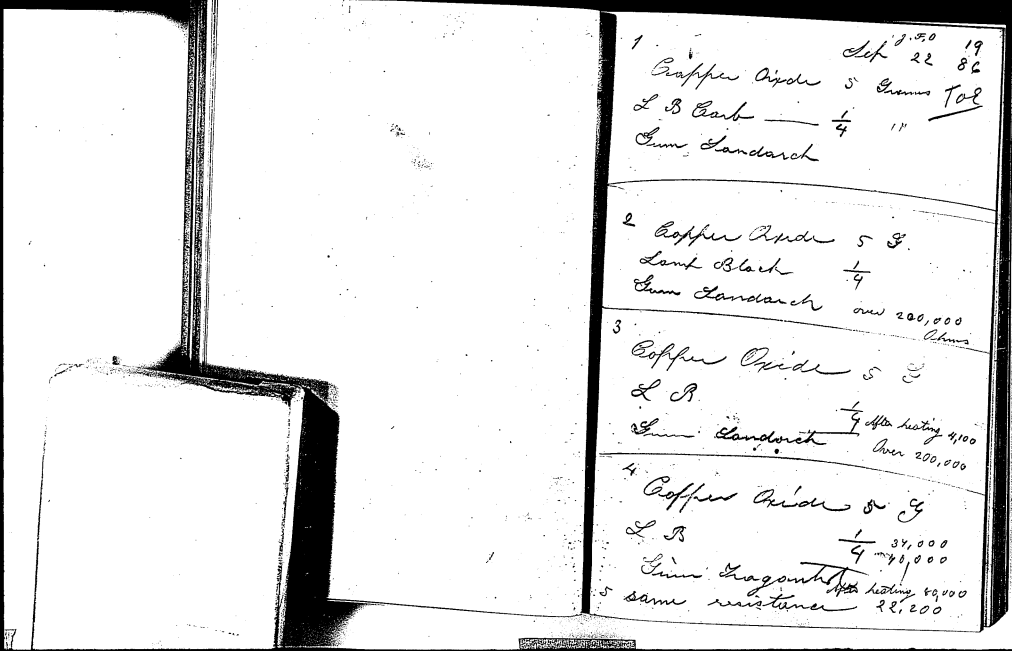
Mixed Copper Oxide 5 Grams
L. B. Carb 1/4
put in cup dryed in Dryer
This dried to Ohms
cup did not dry with Lamp
in shuttle dry 39,000

5 X 1/4 Mixture, made two.
this run through tube
one measured 20,800
the other This worked 34,000
very well

5 × 1/4 Mixture J. 5 Oct 18
1/4 P. C. Carb wet dryed
in dyer measured resistance
Wired to inside parts
One measured Ohms — 280,000
The other
This wired through tube down to inside parts 140,000

5 × 1/4 Mixture
1/4 P. C. Carb wet with
Licorice water
Resist Ohms 1350
This wired on 100 Volts & broke in
wired to inside parts

5 × 1/4 Mixture
with Licorice water
wired first with lamp two seconds
then came up again, & held Ohms 580
Now wired to inside parts



1 Sept 19
Copper Oxide 5 Grams 22 8C
L B Carb ___ 1/4 " Tol
Gum Sandarach

2 Copper Oxide 5 G.
Lamp Black 1/4
Gum Sandarach over 200,000 Ohms

3 Copper Oxide 5 G
L B 1/4 After heating 4,100
Gum Sandarach Over 200,000

4 Copper Oxide 5 G
L B 1/4 34,000
40,000
Gum Dragonth After heating 40,000
5 same resistance 22,200

2.50 20
101

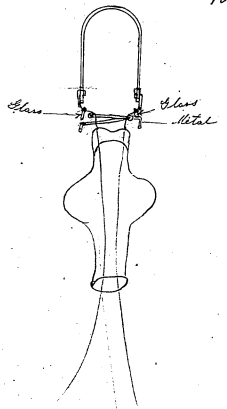
Made glass cup in place of double tube having poles spread at bottom to prevent short at that end and make them the means of the carbon

Sept. 22, 86

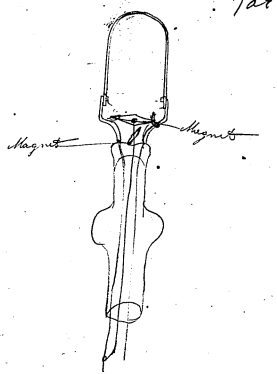
Sept, 22, 56

J. F. Ott

Tag



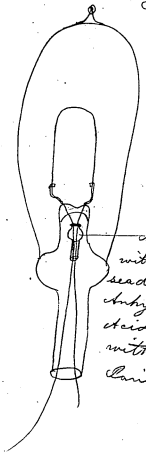
Lick 1826
2.15.0
Tab



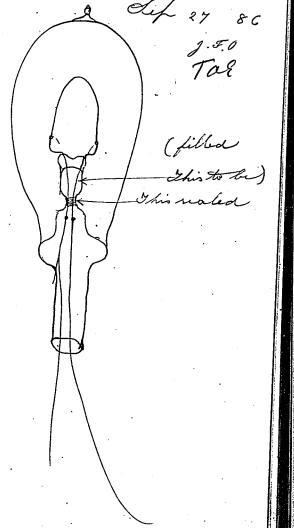
Sept. 22. 80

J. E. Dibb

T.A.E.



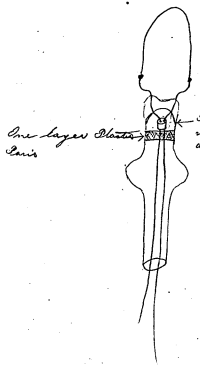
To be filled with Paraffin Oil, sealed with Anhydrous Boric Acid, & close with Plaster Paris


Left 27 8C
J.F.O
TAE
(filled
this to be)
this sealed

Sept 29. 86

J. F. T.

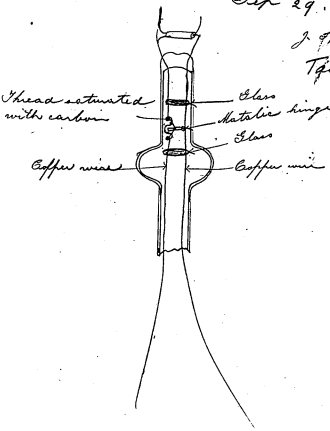
Tate



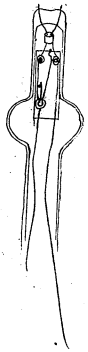
Sept 29. 86

J. T. Ott

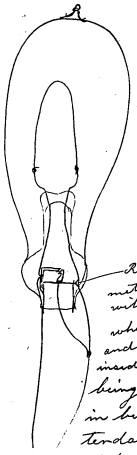
T&E



Dep 30 66
J. F. Gott
Tag



Sep 30, 86
J. F. Otis
Tel

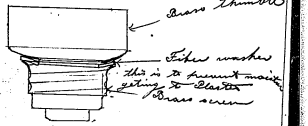


Rubber or
metal diaphram
with hook ketch
when cant tres
and burns throug
inside part, thin
being a vacuum
in bulb this
tendancy is to
draw the diaphram
in and hook will catch
and short circuit &c
thus establishing the line

Sept 30 1880

J. F. Otto

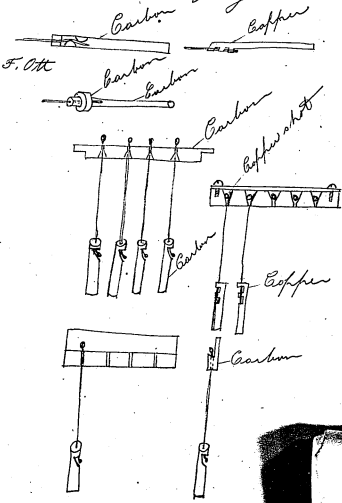
Jas



Nov 10 86

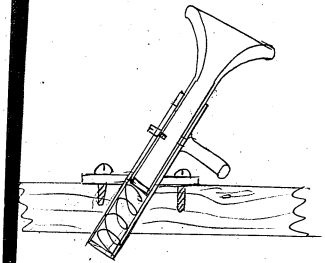
Clamps for holding round fibers for carbonizing

J. F. Ott



J. F. Otto

Nov 17 86

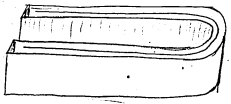


Valve for blowing bulbs

Nov 22 86

Mold for Carbonizing

J. F. Otis



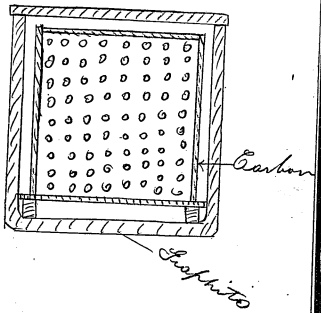
Filled with Anthracite

Lid

Nov 23, 86

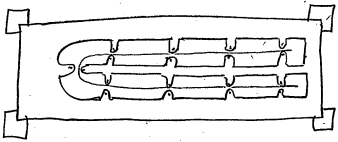
Carbon moulds

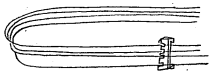
J. F. Otto



Nov 23 86
J. F. Otto

Form for putting
in Carbons into mould



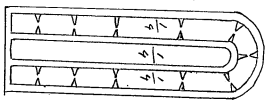


Compound for making
Threads for cut outs on
Municipal Lamps

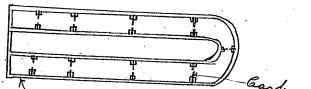
20 C C Lamps
1 G. Asfelt
8 G. Eddys Lamp Black
3/8 G. Gel Lamp Black

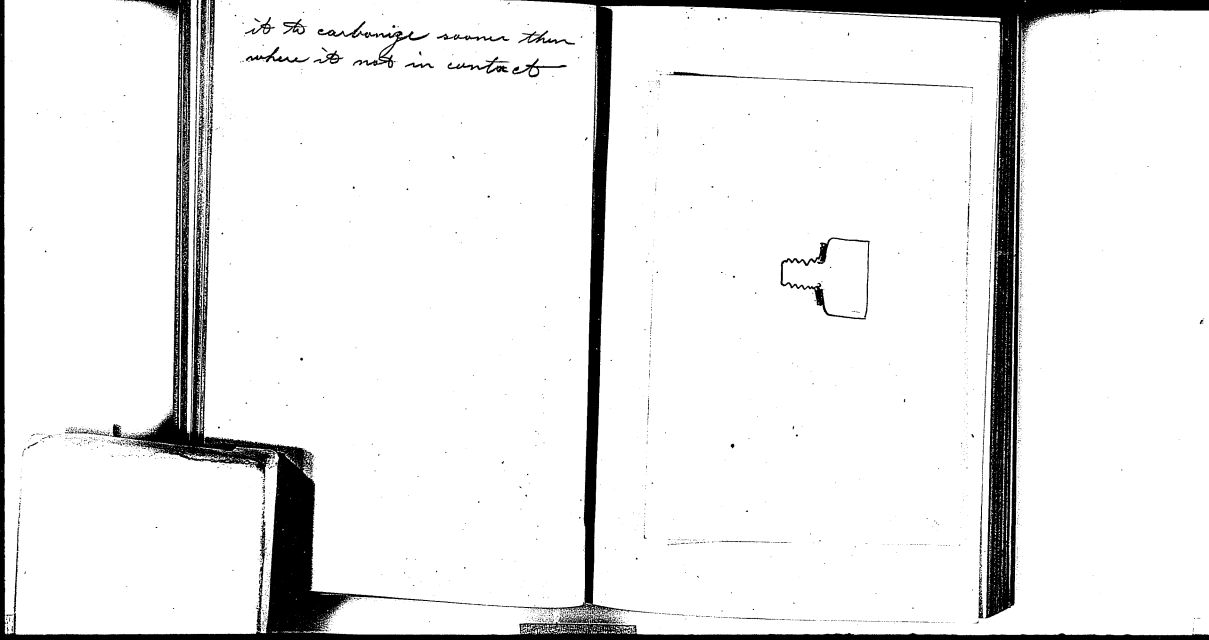
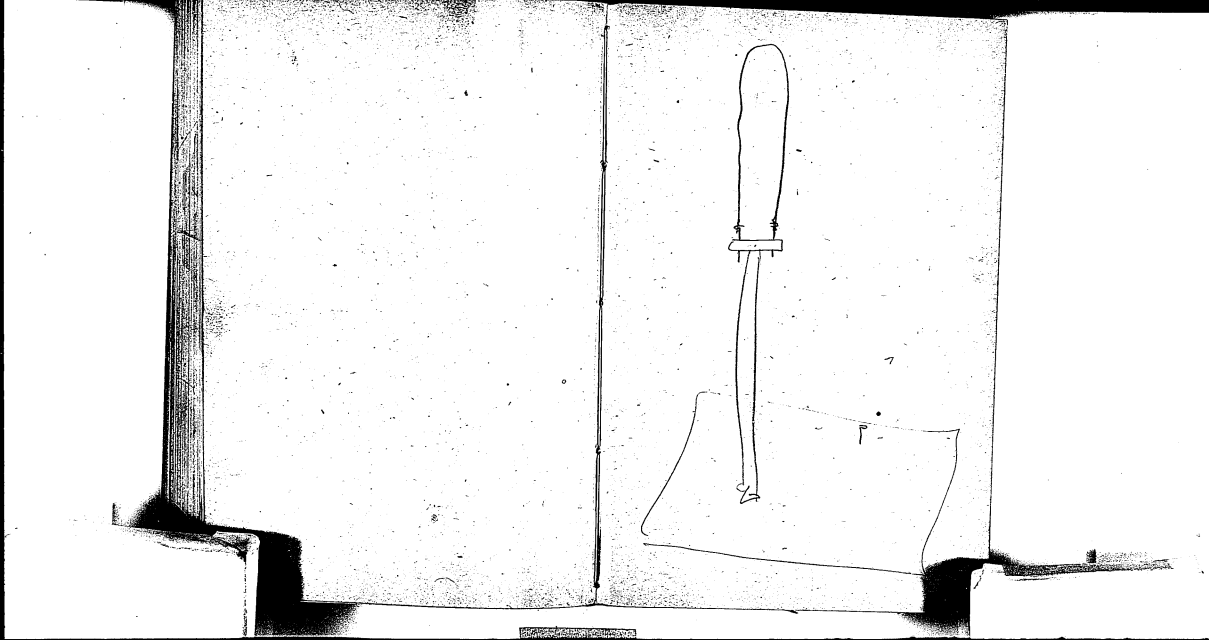
Dec 22. 86

J. F. Ott



Small pieces of Carbon
Stuck on inside of Carbon
Mould with Spanish licorice
& keck fillement — cement
then fill in with coal



This prevents the metal from
coming in contact with filiment
~~in contact with filiment~~ would cause

it to carbonize sooner than where it not in contact